



Patent Technology Center 1700

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Fax Notes:

Attached are proposed amendments that I feel are necessary to place the application in condition for allowance. Claim 1 would be amended to make the claim commensurate with the applicant's arguments. Claim 24 would be amended to provide the necessary structural limitations to make the claim allowable and commensurate with the applicant's arguments. Claim 26 would be amended to provide a range that is fully supported by the applicant's original disclosure. Note that the 800 kg/m³ end point is not supported with sufficient specificity. Claim 27 would be amended to eliminate problems under 112, 2nd paragraph. The remaining changes are necessary so that the claims have proper antecedent basis. Please call me with any questions.

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PROPOSED AMENDMENTS TO SERIAL NO. 09/973,086

The abstract would be amended as follows:

line 2, "are provided" would be deleted after "core".

Claim 1 would be replaced by the following:

1. (Currently Amended) A method of forming a fire door core, comprising the steps of:

a) depositing into a mold a mixture of exfoliated vermiculite, a resin and a hydraulic binder₁;

b) controlling a temperature of the mold such that the mold [being] is maintained at a temperature less than the reaction temperature of the resin;

[b)] c) transferring the mold and thereby the mixture to a heated press;

[c)] d) applying to the mixture through the press a predetermined pressure at a predetermined temperature for a predetermined period sufficient to harden the mixture into a fire retardant fire door core having basic properties meeting industry-wide fire endurance tests; and

[d)] e) removing the hardened fire retardant fire door core from the mold₁
wherein the hardened fire retardant fire door core has good integrity and dimensional stability when exposed to fire temperatures.

Claim 10 would be amended as follows:

line 4, "a slab" would be deleted after "into" and -- the core -- would be inserted after "into".

Claim 13 would be amended as follows:

line 3, "the slab" would be deleted after "impregnating" and -- the core -- would be inserted after "impregnating".

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Claim 14 would be amended as follows:

line 3, "the slab" would be deleted after "to" and -- the core -- would be inserted after "to".

Claim 15 would be amended as follows:

line 3, "the slab" would be deleted after "immersing", -- the core -- would be inserted after "immersing", "the slab" would be deleted after "allowing" and -- the core -- would be inserted after "allowing".

Claim 16 would be amended as follows:

lines 3 & 4, "the slab" would be deleted after "immersing" and -- the core -- would be inserted after "immersing".

Claim 17 would be amended as follows:

line 3, "the slab" would be deleted after "drying" and -- the core -- would be inserted after "drying".

Claim 23 would be amended as follows:

line 2, "the slab" would be deleted before "has" and -- the core -- would be inserted before "has".

Claim 24 would be replaced by the following:

24. (Currently Amended) A fire retardant fire door core forming system, comprising:

- a) a plurality of raw material sources for storing raw materials including exfoliated vermiculite, resin, and hydraulic binder;
- b) a mixing system, said mixing system in communication with said raw material sources, said mixing system comprising a first mixing assembly for combining [so that] said resin and said hydraulic binder [are combined] to create a submixture[,], and a second mixing assembly in

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communication with said first mixing assembly for combining said submixture [is then combine d] with said exfoliated vermiculite to create a final mixture;

c) a plurality of molds, each mold [for] in operative communication with said [mixing system] second mixing assembly for receiving a predetermined supply of said final mixture of said raw materials from said second mixing assembly thereby providing a plurality of filled molds;

d) a vibratory assembly for receiving each of said filled molds and for causing [the mixed] said final mixture of said raw materials in said filled molds to achieve a substantially uniform density in [the] each of the associated filled and vibrated molds; and

e) a heated press in operative association with said vibratory assembly for receiving the filled and vibrated molds and for applying sufficient heat and pressure for a sufficient period to cause [the mixed] said final mixture of said raw materials in each of said filled and vibrated molds to [achieve a slab] form fire retardant fire door cores having a hardened state.

Claim 25 would be amended as follows:

line 3, "slabs" would be deleted after "hardened" and -- cores -- would be inserted after "hardened"; and

line 5, "slabs" would be deleted after "drying the" and -- cores -- would be inserted after "drying the".

Claim 26 would be replaced by the following:

26. (Currently Amended) A method of forming [a hardened slab] fire door components of resin bonded vermiculate and hydraulic binder, comprising the steps of:

a) depositing into a mold a mixture of exfoliated vermiculite, a resin and a hydraulic binder, the mold being maintained at a temperature less than the reaction temperature of the resin;

b) transferring the mold and thereby the mixture to a heated press;

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- c) applying to the mixture through the press a predetermined pressure at a predetermined temperature for a predetermined period sufficient to harden the mixture into a [slab] fire door core having a density from about 350 kg/m³ to about [800] 600 kg/m³; and
- d) removing the hardened [slab] fire door core from the mold.

Claim 27 would be replaced by the following:

27. (Currently Amended) The method of forming [a hardened slab] fire door components of resin bonded vermiculite and hydraulic binder as in claim 26, further comprising the steps of:

- a) depositing into a second mold a second mixture of exfoliated vermiculite, a resin and a hydraulic binder, the second mold being maintained at a temperature less than the reaction temperature of the resin;
- b) transferring the second mold and thereby the second mixture to the heated press; and
- c) applying substantially 800-1200 p.s.i. pressure to the second mixture in the second mold in the press and thereby forming a hardened slab having a density of from about 900 to about 1,300 kg/m³.

Claim 28 would be amended as follows:

line 1, "a hardened slab" would be deleted after "forming" and -- fire door components -- would be inserted after "forming".